Quiz 3 Sep. 19, 2014

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What if each color had 4 bits instead of 8 to represent the value?
   1. If the alpha also had 4 bits, what would the word size we need to represent a pixel?
      1. the word size would be 16 bits
   2. How many colors can you display with this kind of system?
      1. 4x4x4x4
2. Write a program which creates a picture 200 pixels wide and 200 pixels high and make each pixel has the same color. The color should be ‘bisque’ which is the default color for an older version of the tk windowing environment. Tcl/tk is a very popular and powerful language (short for Tool Command Language). tk\_bisque is a color which has the HTML value of #e6ceb1. This is a way of specifying a color using the RGB values in Hexadecimal. If you convert this to binary, you can then convert to decimal to figure out the color values to put into setColor() in JES. For instance, e = 1110 = 14 and 6 = 0110 (= 6), so e6 is 11100110 which is an 8 bit color value for red. Converting 11100110 to decimal gives you 14\*16 + 6 = 230. So the value for red is 230. Do the same for green and blue using ce and b1 respectively. You can use your bin2dec() function if you like or just do it by hand.
   1. red=230, green=206, blue=177

pic=createEmptyPicture(200,200)

for row in range (200):

for col in range (200):

p=getPixel(pic,col,row)

c=color4row(row)

def color4row(row):

r=red4row(row)

g=green4row(row)

b=blue4row(row)

return makeColor(r,g,b)

def red4row(row):

return -230/200 X row+230